

April 2016 Biological Farming Roundtable Notes

What: The Biological Farming Roundtable was held at the NutriSoil Production and Education Facility on Thursday the 28th of April.

Why: The aim of the Biological Farming Roundtable is to initiate discussion on biological farming, helping farmers explore innovative, low input, regenerative, profitable and productive farming systems.

The group supports each other's journey in an emerging regenerative agricultural paradigm where dominant conventional views can often be a barrier to change and success.

What's To Come for 2016?

June 30th: Demystifying alternative products with David Hardwick.

July 28th: NutriSoil Open Day with Walter Jehne and David Hardwick.

August 25th: Nutrient Management with David Hardwick

October 27th: Focus Farmer Session - Learning from the Champions.

Who: This Roundtable discussion was led by Col Harper. Col operates a 5000 acre mixed farming enterprise in Aria Park, NSW. The program includes:



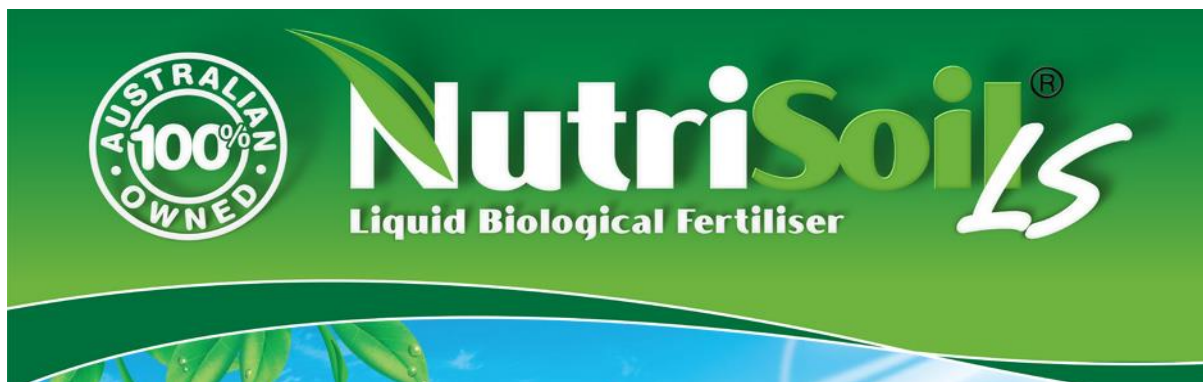
- Aged manure applications at 2.5T/ha
- NutriSoil Organic VermiCast at 250kg/ha
- 5L NutriSoil Liquid in furrow at sowing
- Exhaust Fertiliser System
- Three year pasture phases utilising perennial clovers
- Sheep grazing stubble
- Occasional lime applications
- Best TM Ag with glyphosate applications



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It's Not Just the Nutrient Content.

Col embarked on some testing to ensure he was getting value for his dollar. The nutrient value of four practices he was trialling were tested for nutrient content, then broken down into nutrient value per tonne. The four nutrient additions included:

1. Compost sourced locally;
2. Cow manure sourced locally;
3. Green manuring with fleabane; and
4. NutriSoil Organic VermiCast.

Results from nutrient testing indicated that the cow manure was higher in nutrient. A dollar value was then worked out on nutrient content with manure being the best value for money in this calculation.

Visual Indicators Prompted Further Investigation.

In the areas where VermiCast was applied, at 250kg/ha, as a soil preparation before sowing the crop, there were visual indicators to show that the VermiCast was getting good results. Root depth and mass were excellent, aggregates stuck well to the root zone when shaken, (indicating high microbial activity in this zone), and strike rate and top growth was also good.

Further testing was carried out on three trials in a Canola crop through Microbiology Laboratories Australia. All trials were treated with NutriSoil at 5L/ha in furrow at sowing (45L water, 5L NutriSoil) and the Exhaust Fertiliser System.

1. Control (5L/ha NS and Exhaust Fertiliser System)
2. Cow manure at 2.5t/ha and (5L/ha NS and Exhaust Fertiliser System)
3. VermiCast at 250kg/ha and (5L/ha NS and Exhaust Fertiliser System)



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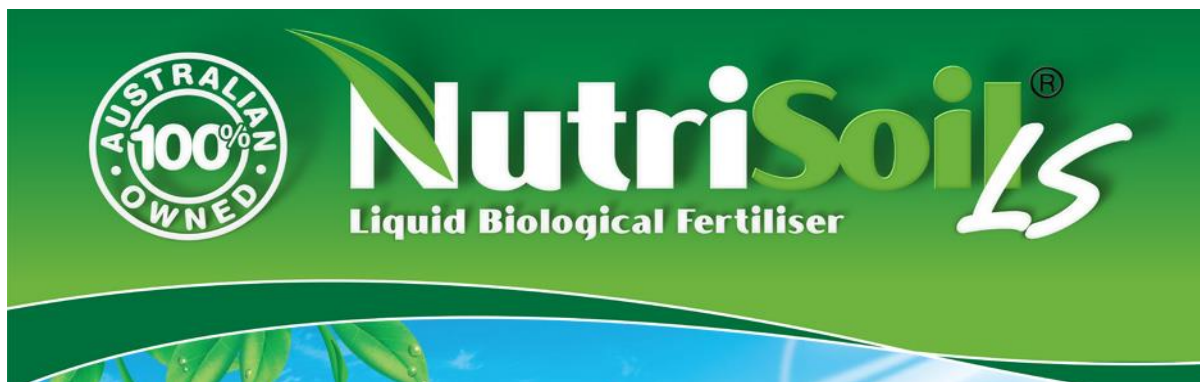
Canola Trial Ariah Park NSW



Results from the lab testing showed clear improvements in both Cow Manure and VermiCast applications with the VermiCast trial being **significantly** higher in all areas.

NutriSoil and Exhaust in furrow. No chemical seed treatment. 2 weeks old, very minimal rain.

Soil Indicator	Control	Cow Manure 2.5t/ha	NutriSoil VermiCast 250kg/ha
Nutrient Solubilisation Rate	46.2%	59%	82.6%
Disease Resistance	64.1%	72.7%	88.4%
Nutrient Accessibility (VAM)	14.8%	18%	65.2%
Nutrient Cycling Rate	91.4%	95.9%	100%
Drought Resistance	57.4%	59%	82.6%
Overall Microbial Balance	76.7%	83.9%	91.5%



Farming With a Balanced Approach.

Soil is a dynamic equilibrium. In Col's system any negative disturbance of the soil is balanced with a positive input. Below are results from a trial conducted by Col comparing three different practices at sowing. Results showed clear improvements in using the Exhaust Fertiliser System as well as using TM Ag (s soil amendment that stimulates biology) with Roundup applications.

Plant Count Trials

Plants /m2 – 15/05/2014				
	Control	Exhaust	Exhaust Improvement	Compared to 1LRup
OFFSET DISC	101	112	10%	133%
1L Rup TM Ag	97	101	4%	120%
1L Roundup	84	97	15%	100%

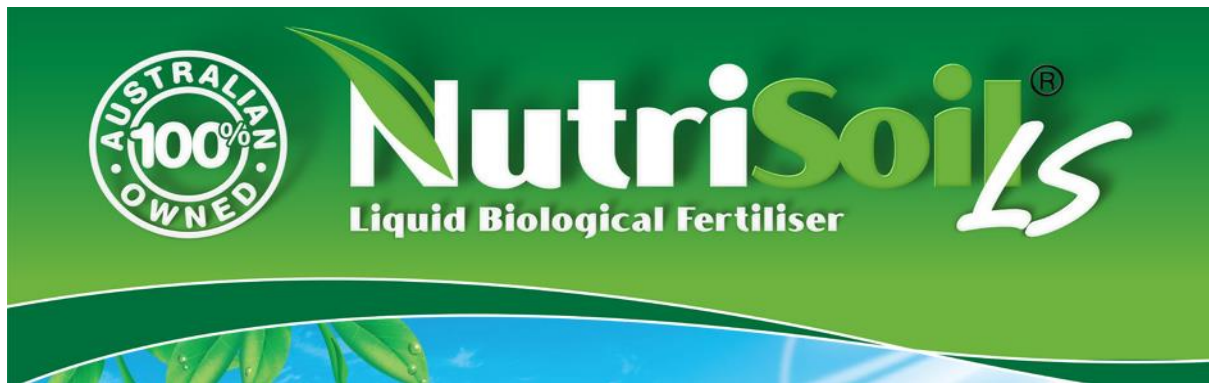
Shoots/m2 – 7/08/2014				
	Control	Exhaust	Exhaust Improvement	Compared to 1LRup
OFFSET DISC	669	836	24%	143%
1LRup 250ml TM Ag	724	813	12%	139%
1L Roundup	584	659	12%	100%



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Lessons Learnt.

- It's not just the nutrient content that promotes good growth and regenerates soil.
- Modern science cannot fully understand the complexity of the soil's interactions but it does provide a basis for knowledge to assist us in understanding how to work **with** these ecosystems.
- Science evolves as the understanding of our world changes and **science is changing**, slowly. Farmers are becoming increasingly vocal, asking questions, watching for visual responses from their inputs and equipping themselves with their own decision making tools. Intuitive farmers are now operating ahead of science.
- Visual observations are an essential tool, soil and microbial testing can assist to help us understand these results. This can be referred to as "Action Learning", it helps us build knowledge to make more informed decisions in the future.
- Nutrient applied in a rock dust form such as lime, soft rock phosphate, boron etc is not in a plant available form and still relies on the microbial bridge to make these available to plants.
- When considering fertilisation to soil, it is becoming more evident that a bio-stimulant is needed to make that addition more available.
- We need to move away from the one season mentality. Any addition to soil should be considered with current yield potential and future sustainability of soil for generations to come.



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